

# Barrier Protection during Airway Intubation

Inderpaul S Sehgal<sup>1</sup>, Lakshmi N Yaddanapudi<sup>2</sup>, Sahajal Dhoooria<sup>3</sup>, Kuruswamy Thurai Prasad<sup>4</sup>, Govardhan D Puri<sup>5</sup>, Valliappan Muthu<sup>6</sup>, Ritesh Agarwal<sup>7</sup>

*Indian Journal of Critical Care Medicine* (2020): 10.5005/jp-journals-10071-23460

Dear editor

Endotracheal intubation is a high-aerosol-generating procedure, and care should be taken to prevent the healthcare worker from the aerosol exposure incurred during the procedure. Apart from the regular personal protective equipment, a barrier box has been suggested to further minimize the aerosol exposure during the intubation.<sup>1,2</sup> We have used the originally described barrier enclosure device. We found that there was a restriction of movement of hands during the endotracheal intubation (Figs 1A and B), which was also acknowledged by the previous authors.<sup>2</sup>

To improve the operator comfort during the airway manipulation, we then made certain changes in the barrier device. We converted the circular holes to oblong. Further, we also added oblong holes on the side of the box to facilitate the handling of central venous catheters.

<sup>1-4,6,7</sup>Department of Pulmonary Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh, India

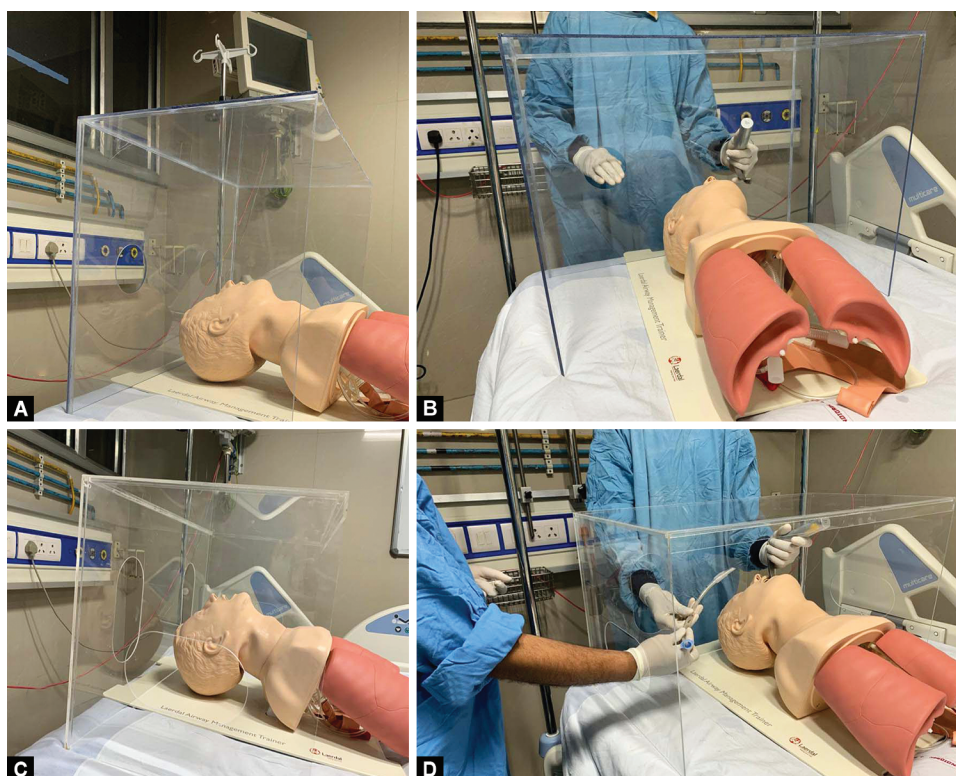
<sup>5</sup>Department of Anesthesia, Postgraduate Institute of Medical Education and Research, Chandigarh, India

**Corresponding Author:** Ritesh Agarwal, Department of Pulmonary Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh, India, e-mail: agarwal.ritesh@outlook.in

**How to cite this article:** Sehgal IS, Yaddanapudi LN, Dhoooria S, Thurai Prasad K, Puri GD, Muthu V, *et al.* Barrier Protection during Airway Intubation. *Indian J Crit Care Med* 2020;24(6):485–486.

**Source of support:** Nil

**Conflict of interest:** None



**Figs 1A to D:** Shows the barrier box described previously (A), which restricts hand movement during the endotracheal intubation (B); (C) Shows the modified barrier box with oblong holes that facilitate free movement of the hands while the ports at the sides; (D) allow the handling of central venous catheters and facilitate easy suctioning

The same port can also be used for suctioning (Figs 1C and D). However, this enclosure device cannot be used for performing the bronchoscopies. The conversion to the oblong holes improved the maneuverability of the hands during the airway intubation. To prevent dispersion of the droplets through these holes, they should be covered with collapsible material that can be removed and cleaned. The enclosure device after each use should be cleaned by wiping with either 1% sodium hypochlorite solution or 70% isopropyl alcohol or 70% ethyl alcohol followed by soap and water. Importantly, those involved in cleaning should be properly donned (surgical gown, N-95 mask, and visor). Although there is a theoretical advantage of using these enclosure devices, whether this device would reduce the risk of infection in the healthcare workers needs evaluation in a future trial.

We believe that centers involved in the care of the critically ill subjects with COVID-19 use these protective barriers in addition to the standard precautions to prevent droplet dispersion during the airway intubation and procedures such as bronchoscopy.

## REFERENCES

1. Everington K. Taiwanese doctor invents device to protect US doctors against coronavirus. Taiwan News. March 23, 2020 <https://www.taiwannews.com.tw/en/news/3902435>.
2. Canelli R, Connor CW, Gonzalez M, Nozari A, Ortega R. Barrier enclosure during endotracheal intubation. *N Engl J Med* 2020;382(20): 1957–1958. DOI: 10.1056/NEJMc2007589.